



CLAIM LISTING

Claims 1-30: (cancelled)

Claim 31.(New) A business method for actively managing a first dynamic process comprising:

declaring and stating an objective of said first dynamic process as a set of measurable goals and constraints;

declaring and stating, for the purpose of accomplishing at least a part of said objective, at least one objective rule set having a plurality of rules:

wherein the rules in said objective rule set may act in any order subject to the limitation that, for any specific rule in said objective rule set, that specific rule's condition and applicable constraints must be satisfied before that specific rule's action may occur;

delegating to at least one specific actor:

at least a first subordinate objective, subordinate to the objective, stating the first subordinate objective as a subset of subordinate, measurable goals and subordinate constraints;

a set of rules for accomplishing said first subordinate objective;

at least one rule stating both authority and accountability for attaining the subordinate, measurable goals of said first subordinate objective, and,

at least one rule stating the responsibility and accountability for attaining the subordinate, measurable goals of said first subordinate objective subject to the constraints and subordinate constraints;

determining the satisfaction of any rule's condition and triggering the occurrence of said rule's action;

wherein said rule's condition includes measurable values from at least one member of a set of sources; and,
said set of sources comprise a source internal to said dynamic process, a source external to said dynamic process, and a source in the real world;

modifying at least one element through the action of at least a rule whose condition is triggered by at least one input from an event in the real world;

giving each element, and each of the steps of declaring and stating, delegating, and modifying, a declarative and therefore non-procedural representation.

Claim 32.(New) A method as in Claim 31 further comprising iterating at least one of the steps of declaring and stating, delegating, determining, and modifying.

Claim 33.(New) A method as in Claim 1, further comprising the step of redeclaring and restating at least one action of at least one rule as a second dynamic process.

Claim 34.(New) A method as in Claim 31 wherein the dynamic process represents a business's operational flow.

Claim 35.(New) A method as in Claim 31 further comprising adding at least one new element to the dynamic process in response to at least one input.

Claim 36.(New) A method as in Claim 31 further comprising the step of using the measurable goals and measurable values to assess at least one member of a set of assessments, that set of assessments comprising risk of error, minimum contribution of any rule to the goal, maximum contribution of any rule to the goal, risk of deviation from the goal due to the action of any rule, performance of at least one actor, and relative efficiencies among any two actors.

Claim 37.(New) A method as in Claim 31 further comprising using the deviation of measured values from measurable goals for at least one member of a set comprising accounting control, regulatory control, and reporting.

Claim 38.(New) A method as in Claim 31 wherein said dynamic process forms a business autopilot.

Claim 39.(New) A method as in Claim 1, further comprising:

including a set of constraints consisting of at least one constraint;

including a first rule consisting of at least a first rule;

including a second rule set consisting of at least a second rule; and,

including a set of ordering rules consisting of at least one ordering rule;

wherein the relative order by which each rule in the first rule set and at least a second rule in the second rule set are satisfied is determined according to at least one member of a set comprising the set of constraints, implicit rule precedence making the action of each rule in the first rule set satisfy a condition of the second rule, the set of constraints, and the set of ordering rules.

Claim 40.(New) A method as in Claim 1, further comprising declaring and stating at least a first rule set and a second rule set, wherein the second rule set is subordinate to the first rule set, and wherein the second rule set inherits from the first rule set at least one condition of a rule in the first rule set as a constraint on the second rule set and at least one action of a rule in the first rule set as a goal of the second rule set.

Claim 41.(New) A method as in Claim 1, further comprising declaring and stating at least a first rule set and a second rule set, wherein the second rule set is subordinate to the first rule set, and wherein at least one change in constraints by action of at least one rule of the second rule set is passed to the first rule set.

Claim 42.(New) A method as in Claim 1, wherein said declarative representation is at least one member of a representation set comprising symbolic logic and computer language.

Claim 43.(New) A method as in Claim 1, wherein for at least one rule:

the condition of said rule detects a difference between at least one element of said dynamic process and a measurable value from at least one input, and the action of said rule has an affect on at least that one element of said first dynamic process by modifying that one element to do at least one member of a response set comprising accommodate the measurable value, and adjust performance of said dynamic process as indicated by the measurable value.

Claim 44.(New) A method as in Claim 31 further comprising measuring the deviation of measurable values from measurable goals to analyze the efficiency of a business operation.

Claim 45.(New) A method as in Claim 31 further comprising :

incorporating a set of resolving constraints comprising at least one member of a resolving set comprising a resolving constraint and a resolving rule; and,
incorporating at least one ambiguous rule;

wherein said resolving set determines whether the action of said ambiguous rule will be triggered when the evaluation of a condition is a value that is not true and is not false.

Claim 46.(New) A method as in Claim 31 wherein, in the step of delegating, at least one member of what is delegated to one specific actor is a consequence of the rules, constraints, and measurements assigned to an actor.

Claim 47.(New) A method as in Claim 31 wherein at least one element maintains consistency among any combination of authority to act, responsibility, response to operational failure, and accountability.

Claim 48.(New) A method as in Claim 31 wherein at least one rule makes explicit why actions are undertaken and what is to be achieved.

Claim 49.(New) A method as in Claim 31 wherein a first rule is replaced by a set of refinement rules that include at least the action of the first rule without the set of refinement rules including the first rule.

Claim 50.(New) A method as in Claim 49 further comprising
incorporating a first risk of error associated with the first rule;
incorporating a second risk of error associated with a second rule belonging to the set of refinement rules;
wherein the second rule has the least risk of error of any rule in the set of refinement rules; and wherein the second risk of error is not greater than the first risk of error.

Claim 51.(New) A method as in Claim 31 wherein the step of declaring and stating at least one objective rule set comprises stating at least a first objective rule set and a second objective rule set, wherein the first objective rule set operates at a first level of the dynamic process and the second objective rule set operates at a second level of the dynamic process.

Claim 52.(New) A method as in Claim 51, wherein said first and second levels are indistinct and said first objective rule set and said second objective rule set form a peer to peer organization.

Claim 53.(New) A method as in Claim 51, wherein said first and second levels are distinct and said first objective rule set and said second objective rule set form a hierarchical organization.

Claim 54.(New) A method as in Claim 31, further comprising declaring and stating at least a first rule set and a second rule set, wherein the second rule set is subordinate to the first rule set, and wherein the first rule set further receives, from the second rule set, the result of an action by a rule of the second rule set as satisfaction of at least one condition of a rule of the first rule set.

Claim 55.(New) A method as in Claim 54, wherein the first rule set further comprises at least a superior objective and wherein the action of the second rule set conveys information to the first rule set sufficient for the first rule set to alter at least the superior objective when the superior objective does not conform to a measurable value from the real world.

Claim 56.(New) A method as in Claim 31, further comprising:

- including at least a second rule set comprising a set of rules that are connected such that there is no rule for which both its condition is not satisfied by some combination of actions and events, and its action does not eventually in combination with the actions of other rules in the set satisfy the conditions of at least one rule;

- including at least a first rule in said second rule set whose condition has been satisfied at least once;

- and,

- further including a set of pairs comprising an identification of a satisfied rule and a time said satisfied rule was satisfied, said set of pairs being partially ordered and constituting a first subordinate process.

Claim 57.(New) A method as in Claim 56 wherein the second rule set comprises the entire set of satisfied rules of the first dynamic process and no explicit ordering of the rules in the second rule set is provided in defining said first dynamic process.

Claim 58.(New) A method as in Claim 31 wherein said set of rules includes at least one anticipatory rule, the satisfaction of the condition portion of said anticipatory rule being merely a possibility when said rule is initially stated.

Claim 59.(New) A method as in Claim 58 wherein said condition of said anticipatory rule incorporates at least one conjunct which, at the time of creation of the rule, incorporates a measurable value that is contrary to the known and projected state of the real world.

Claim 60.(New) A method as in Claim 31 further comprising
storing said representation in a static and stable form so as to preserve human knowledge of said dynamic process.

Claim 61.(New) A method as in Claim 60 further comprising the steps of
organizing in a first business entity said representation of said dynamic process for conveyance to a second business entity, and,
conveying said representation from the first business entity to the second business entity.

Claim 62.(New) A method as in Claim 60 wherein said representation of said dynamic process stores knowledge of at least one member of a set comprising organizational

management, at least one model of business organization, at least one operational process, and at least one strategic process.

Claim 63.(New) A method as in Claim 60 further comprising the steps of:
retrieving at least a portion of said representation, and,
instantiating said portion of said representation as a second dynamic process in a business.

Claim 64.(New) A method as in Claim 31 wherein the step of delegating to at least one specific actor further comprises:
a first actor at a first level stating a plurality of business rules comprising possible conditions, each condition comprising at least one member of a set comprising factual circumstance, market situation, business event, and measurable value, and joined with at least one corresponding desired action matching a first measurable goal;
a second actor at a second level identifying a goal-achieving set of business rules whereby said first measurable goal may be attained;
and;
said second actor communicating at least a first result of the goal-achieving set of rules to said first actor.

Claim 65.(New) A method as in Claim 64 wherein said plurality of business rules are responsive to a plurality of events, and wherein the actual operation of the plurality of business rules are combined to form a business process independent of any pre-existing definition of the business process.

Claim 66.(New) A method as in Claim 64 wherein said measurable goal is expressed as at least one goal rule comprising a goal condition which identifies said measurable goal and a goal action which specifies any combination of the members of a measure set consisting of a measure of success, a measurement constraint, and a measure of failure.

Claim 67.(New) A method as in Claim 64 wherein the first actor further:
identifies the maximum acceptable risk associated with each rule in a first rule set at the second level;
determines the risk associated with each rule; and,
for each rule in rule set with risk that is not below the maximum acceptable risk associated with said rule, further refines actions of each such rule by delegating its actions as a goal to a rule set at a third level.

Claim 68.(New) A method as in Claim 64 wherein the step of communicating further comprises stating at least one rule having at least one condition responsive to said desired action and having an action that performs said step of communicating.

Claim 69.(New) A method as in Claim 64 wherein said first result is a qualitative measure of at least one member of a set of measurable properties comprising performance and goal completion.

Claim 70.(New). A method as in Claim 64 wherein said first actor delegates to at least one subordinate actor any combination of any number of the members of a delegation set consisting of responsibility, accountability, and authority that belong to the first actor.

Claim 71.(New) A method as in Claim 70 wherein said delegation is established by a delegation rule comprising at least one delegation condition which tests the appropriateness of achieving said desired action and at least one action which identifies at least one actor as recipient of said delegation.

Claim 72.(New) A method as in Claim 70 wherein a delegation rule comprising a delegation condition and a delegation action delegates authority by at least one member of a set comprising establishing, modifying, and deleting at least one rule set.

Claim 73.(New) A method as in Claim 70 wherein said second actor delegates authority by at least one member of a set comprising establishing, modifying, and deleting at least one rule set.

Claim 74.(New) A method as in Claim 70 wherein said delegation of accountability is accomplished by enabling at least one member of a set, comprising said second actor and said second rule, to alter at least one member of a set comprising measurement of predefined success and measurement process.

Claim 75.(New) A method as in Claim 64 further comprising identifying a second actor according to a goal stated as a set of requirements rules and a set of requirements constraints, and according to measurements stated as a set of capabilities rules.

Claim 76.(New) A method as in Claim 75, wherein each requirement rule in said set of requirements rules comprises at least one requirements condition identifying at least one member of a set comprising the desired action and at least one capability required to accomplish said desired action and at least one requirements action identifying at least

one member of a set comprising at least one capability of said second actor and said desired action.

Claim 77.(New) A method as in Claim 75, wherein each capability rule in said set of capabilities rules consists of at least one member of a set comprising:

- at least one capabilities condition identifying at least one actor and at least one capabilities action identifying at least one capability of said actor; and,
- at least one capabilities condition identifying at least one capability, and at least one capabilities action identifying at least one actor having said capability.

Claim 78.(New) A method as in Claim 75, further comprising a step of matching said second actor with said desired goal by at least one criteria for comparing at least one requirements rule and at least one capabilities rule.

Claim 79.(New) A method as in Claim 78 wherein said criteria establishes at least one member of a match set comprising a best fit match, a fuzzy match, an approximate match, and an exact match.

Claim 80.(New) A method as in Claim 31 wherein the step of modifying at least one element through the action of at least a rule whose condition is triggered by at least one input from at least one real world event in the real world, further comprises:

- defining a first adaptation process comprising at least one adaptation rule;

- constructing said adaptation rule such that:

its action is at least one member of a set of actions comprising element creation, self-modification, feedback, contradiction resolution, conflict resolution, correction for failure, and decision making;

satisfying the condition of the adaptation rule through an event; and,

affecting at least one element through the action of the adaptation rule.

Claim 81.(New) A method as in Claim 80 wherein said first adaptation process is independent of any external agent.

Claim 82.(New) A method as in Claim 80 further comprising monitoring performance by and against specific metrics;

wherein the condition of the adaptive rule is satisfied by performance deviations from the specific metrics; and the action of the adaptive rule is representative of at least one member of a set comprising business events, business measures, business decisions, business rules, and business processes.

Claim 83.(New) A method as in Claim 80 further comprising an adaptation rule that is stated such that, when its condition is satisfied, its action modifies at least a first rule instantiated at a first level such that the first rule effectively modifies at least a first goal of the first level, without requiring intervention from a higher level.

Claim 84.(New) A method as in Claim 80 further comprising:

continuously monitoring for at least one occurrence of the at least one real world event; and,

continuously modifying the elements of the dynamic process, in response to the occurrence of the at least one real world event.

Claim 85.(New) A method as in Claim 80 further comprising:

- incorporating at least one member of a set of dynamic processes comprising creation, deletion, modification, and correction of both objectives and elements;
- linking the adaptation process to at least one member of the set of dynamic processes; and,
- modifying the objectives and elements by the adaptation process according to at least one member of a set comprising conditions and constraints.

Claim 86.(New) A method as in Claim 80 wherein the step of changing at least one element comprises:

- detecting a contradiction;
- changing at least one rule set, further comprising:
 - identifying at least a first and second conflicting rule; and,
 - resolving the contradiction by at least one member of a set comprising adding a new constraint, altering a existing constraint, adding a new rule, altering at least one of the first and second conflicting rules, and eliminating at least one of the first and second conflicting rules;
- so as to logically differentiate the actions of the first and second conflicting rules.

Claim 87.(New) A method as in Claim 80 further comprising reducing at least one operational latency in the dynamic process through the action of the adaptation rule.

Claim 88.(New) A method as in Claim 80 wherein the adaptation rule is stated such that its condition is satisfied when a first contradiction occurs and the adaptation rule's action modifies at least one element.

Claim 89.(New) A method as in Claim 88 wherein the first contradiction comprises at least a first and second logically-conflicting elements, and the adaptation rule's action selects one of the conflicting elements through at least one member of a set of selection techniques comprising random selection, deterministic selection, and arbitrary selection, and modifies the selected element.

Claim 90.(New) A method as in Claim 89, wherein the modification of the selected element prevents simultaneous application of the first and second logically-conflicting elements.

Claim 91.(New) A method as in Claim 88 wherein the first contradiction comprises at least a first and second logically-conflicting element, and the adaptation rule's action alters at least one of the first and second logically-conflicting elements to differentiate the first conflicting rule's condition from the second conflicting rule's condition such that the first conflicting rule's condition and the second conflicting rule's condition cannot be satisfied by the same set of measurable inputs and elements.

Claim 92.(New) A method as in Claim 91 wherein the adaptation rule's action alters at least one of the first and second logically-conflicting elements, so as to preclude the possibility of their simultaneous occurrence, by modifying the first element so as to include a constraint not present in the second element.

Claim 93.(New) A method as in Claim 80 wherein said adaptation rule is stated such that its condition is satisfied when a first failure occurs and its action corrects for the first failure by modifying at least one element.

Claim 94.(New) A method as in Claim 93 wherein the first failure comprises not attaining a first goal and the modification of at least one element enables the first goal to be attained by correcting at least one member of a set comprising at least one cause of the first failure and at least one effect of the first failure.

Claim 95.(New) A method as in Claim 93 wherein the modification of at least one element includes at least one member of a set of steps comprising creating, modifying, and deleting -a second adaptation rule.

Claim 96.(New) A method as in Claim 93 wherein the first failure comprises not detecting a measurable value and the modification of at least one element comprises at least one member of a set comprising creating the element, modifying the element, and deleting the element.

Claim 97.(New) A method as in Claim 93, wherein a second failure comprises not attaining a second goal and the modification of at least one element includes the step of redeclaring and restating at least one action of at least one rule as a second dynamic process.

Claim 98.(New) A method as in Claim 93, wherein the first failure comprises not attaining a first goal and said modification enables said first goal to be attained by

correcting at least one member of a failure set comprising at least a first cause of the first failure and at least a first effect of the first failure.

Claim 99.(New) A method as in Claim 93 wherein when the adaptation rule's condition is satisfied its action modifies at least a first rule of the objective rule set so that, when the first rule's condition is satisfied, the first rule's action modifies at least a first member of the set of measurable goals without human intervention.

Claim 100.(New) A method as in Claim 93 where, when the adaptation rule's condition is satisfied, its action modifies at least a first rule of a set of rules so that when the first rule's condition is satisfied, the first rule's action modifies, without human intervention and without modification of any rule of the objective rule set, at least a first member of a set comprising subordinate goals and measurable goals.

Claim 101.(New) A method as in Claim 93, wherein the step of declaring and stating at least one objective rule set further comprises:

stating at least a first objective rule set and a second objective rule set, wherein the first objective rule set operates at a first level of the dynamic process and the second objective rule set operates at a second level of the dynamic process; and wherein the adaptation rule's condition effectively defines the need for a closed loop effect in said first level and the adaptation rule's action changes at least one element in said second level.

Claim 102.(New) A method as in Claim 93, wherein the step of changing at least one element comprises changing at least one member of a set comprising goal, rule, rule set, condition, action, constraint, measurable value, and delegation.

Claim 103.(New) A method as in Claim 93 wherein the step of declaring and stating at least one objective rule set comprises stating at least a first objective rule set and a second objective rule set:

wherein the first objective rule set operates at a first level of the dynamic process and the second objective rule set operates at a second level of the dynamic process;

and wherein a first goal is associated with the first level and a second goal is associated with the second level; and the first goal and the second goal overlap.

Claim 104.(New) A method as in Claim 103 further comprising using the overlap to avoid at least one member of a set comprising confrontation problems and race-condition problems.

Claim 105.(New) A method as in Claim 93, wherein the step of declaring and stating at least one objective rule set comprises stating at least a first objective rule set and a second objective rule set, wherein the first objective rule set operates at a first level of the dynamic process and the second objective rule set operates at a second level of the dynamic process, and further comprising an organizing rule comprising:

an organizing condition; and

an organizing action;

whereby the organizing condition is satisfied by the condition of at least one rule in said first objective rule set and the organizing action comprises at least the second objective rule set.

Claim 106.(New) A method as in Claim 105 wherein said organizing action delegates at least one member of the set comprising a rule set, authority, accountability, and responsibility, so that said organizing rule creates a delegation hierarchy.

Claim 107.(New) A method as in Claim 93 wherein the step of declaring and stating at least one objective rule set further comprises stating at least a first objective rule set and a second objective rule set, wherein the first objective rule set operates at a first level of the dynamic process and the second objective rule set operates at a second level of the dynamic process, and wherein the response to at least one action of at least one rule in the first rule set becomes at least one condition of at least one rule in the second rule set.

Claim 108.(New) A method as in Claim 107 wherein the first level and the second level are identical, and at least one rule in the first rule set receives at least one response of at least one rule in the second rule set as its condition.

Claim 109.(New) A method as in Claim 107 wherein the step of changing at least one objective rule set comprises changing at least one rule.

Claim 110.(New) A business method comprising defining a dynamic process comprising:
specifying a set of at least two ordered rules, wherein the action of a first rule triggers the condition of a second rule, and all rules in the set form a partially ordered set wherein actions of preceding rules trigger conditions of subsequent rules;
wherein said dynamic process is the set of possible conditions and actions of said partially ordered set of rules.

Claim 111.(New) An apparatus for actively managing a first dynamic process, comprising:

static memory containing

a set of measurable goals and constraints of said first dynamic process;

at least one rule set having a plurality of rules:

wherein the rules in said rule set may act in any order subject to the limitation that, for any specific rule in said rule set, that specific rule's condition and applicable constraints must be satisfied before that specific rule's action may occur;

a declarative and therefore non-procedural representation of each element, and of the steps of declaring, stating, delegating, determining, and modifying;

means for accepting at least one input from the real world, said input comprising a measurable value;

means for comparing any input against the condition of all elements contained in the static memory;

means for delegating to at least one specific actor:

at least a first subordinate objective, subordinate to the objective, stating the first subordinate objective as a subset of subordinate, measurable goals and subordinate constraints;

a subordinate rule set for accomplishing said first subordinate objective;

both authority and accountability for attaining the subordinate, measurable goals of said first subordinate objective, and,

the responsibility and accountability for attaining the subordinate, measurable goals of said first subordinate objective subject to the constraints and subordinate constraints;

means for determining the satisfaction of any rule's condition and immediately triggering the occurrence of said rule's action;

means for modifying at least one element through the action of at least a rule whose condition is triggered by at least one input from an event in the real world; and,

means for iterating through the steps of declaring, stating, delegating, determining, and modifying.